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DEVELOPMENT OF A FUNGUS DISEASE

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A major obstacle to the satisfactory solution of a fungus problem is the recognition of the first symptom expressions by the affected plant in response to a specific organism.

The visual symptoms of a fungus disease are usually the external manifestations of the development of the fungus within the affected tissue. Symptoms vary with host and causal agent so that no one set of symptoms can be given to cover all situations.

The appearance of symptoms indicates that several things have taken place at some earlier stage of the plant's development. Steps usually preceding actual symptoms would be:

1. DISSEMINATION – A disease spreads by dissemination of fungus spores, pieces of mycelium, or other fungus structures.

2. PENETRATION – Penetration is the physical entry of a fungus into the host tissue by means of germ tubes, mycelia or specialized structures.

3. INFECTION - Infection is the actual development of the fungus within the host tissue followed by definite signs or symptoms of such growth. At this stage in the cycle this fungus is usually entirely dependent, for sustenance, on the affected plant.

Control measures frequently fail because established facts concerning fungus diseases in general are not considered. The first of these is diagnosis. The causal agent must be identified before effective control measures may be undertaken. The importance of this one point cannot be stressed enough. A second point that bears repeating is an awareness of the first symptom. Often a single leaf spot or a slightly wilted plant is the forerunner of a serious disease outbreak. Once the facts have revealed the nature of the problem, several practical measures may be utilized:

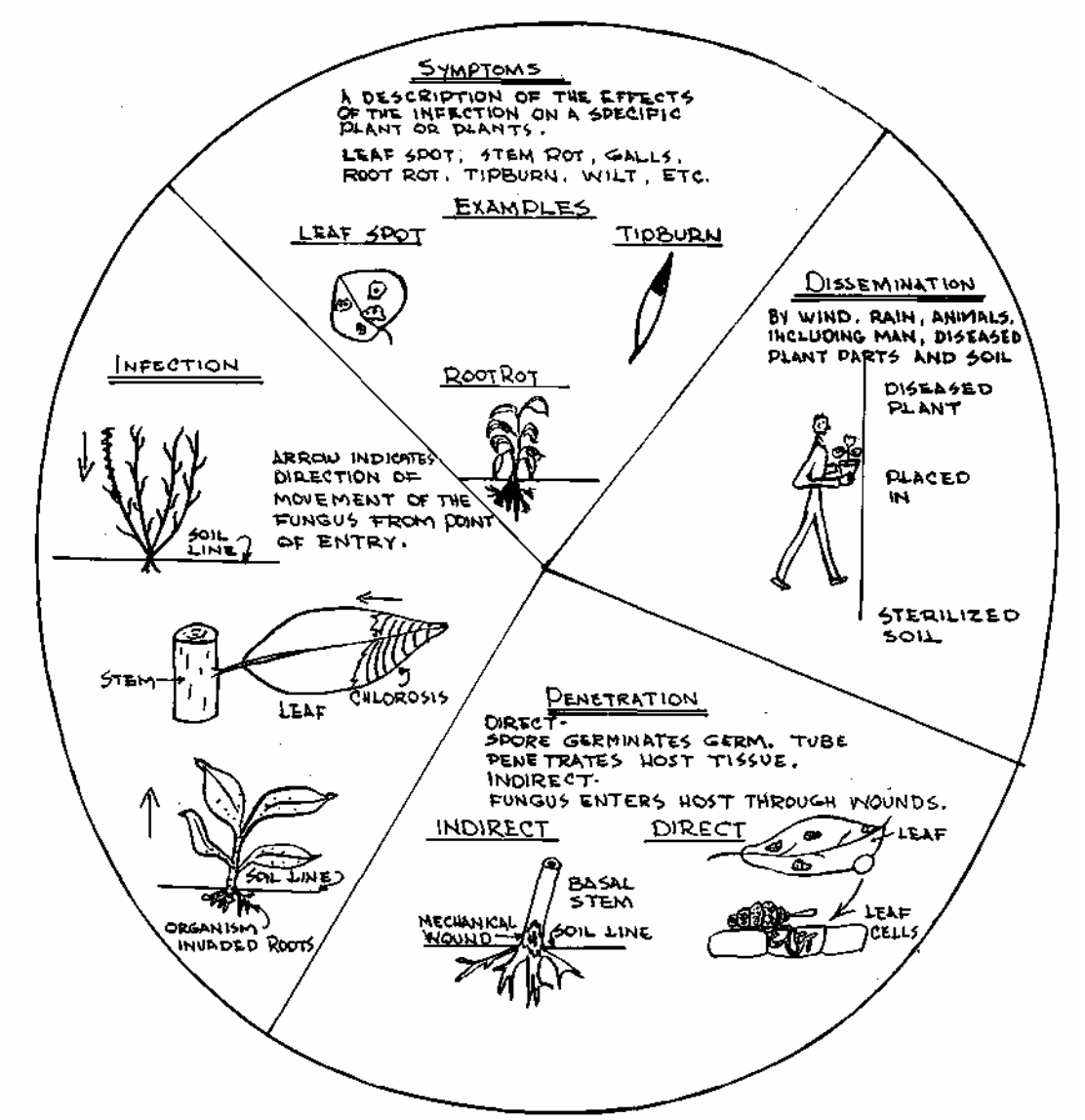
I. STOP FUNGUS SPREAD

a) Erect barriers - A barrier is anything that will keep the fungus away from the plant. An example of one such barrier is the use of screens to prevent insect movement since the bugs may be fungus carriers. Raised benches move the plant away from the soil mass, and are therefore a form of barrier.
b) Treat soil - There are numerous chemicals and steam generators available to the grower for this phase of control.
c) Practice daily collection and disposal of affected plant material.
d) Isolation - This phase may be accomplished by the isolation of individual infected plants or by selecting isolated sites away from known fungus infestation.

For additional suggestions see "The U.C. System for Producing Healthy Container-Grown Plants."

2. Stop Fungus Penetration

a) A regular application of a fungicide will result in a protective film on the foliage or plant parts that may prevent fungus growth and penetration. Fungicides usually kill fungus on contact but generally have a short residual life. Fungi static materials inhibit the growth of a fungus as long as the organism is in contact with the material.



The illustrations represent examples of the various aspects of the development of a fungus

Compiled from the following source material:

Heald, F. D. I943 - Introduction to Plant Pathology.

Roberts, D. A. 1959. A Summary of the Theory of Plant Pathology.

Stakman, E. C. and J. G. Harrar. 1957- Principles of Plant Pathology.